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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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LYON & LYON LLP
633 WEST FIFTH STREET
SUITE 4700
LOS ANGELES, CA 90071

EXAMINER
SELLERS, ROBERT E

ART UNIT	PAPER NUMBER
1712	4

DATE MAILED: 05/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/031,983	FISCHER ET AL.
	Examiner	Art Unit
	Robert Sellers	1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence addr ss --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) *10-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-14* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application)

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Group I, claims 1-9, drawn to a polymercaptopolyamine.

Group II, claims 10 and 12-14, drawn to a composition comprising an epoxy resin and a polymercaptopolyamine.

Group III, claims 11 and 12, drawn to a composition comprising an epoxy resin, a polymercaptopolyamine and a polyamine. (Claims 13 and 14 have been removed from Group III due to their dependence only upon claim 10.).

The inventions listed as Groups I-III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical feature. The special technical feature is the polymercaptopolyamine prepared by the reaction of a (poly)episulfide and excess (poly)amine.

Luhowy et al. exemplifies the reaction of excess methylamine with propylene sulfide (col. 9, Example 6) and the reaction of excess methylamine and 1,7-octadiene-bis-episulfide (cols. 10-11, Example 10). Levine (cols. 2-3, Examples 1-4) shows reaction products of equivalent or excess ethylenediamine or diethylenetriamine with propylene sulfide. Cameron (col. 5, Flexibilizer F) exhibits the reaction of excess ethylenediamine with propylene sulfide.

The claimed polymercaptopolyamine does not make a contribution over the prior art, thereby validating a holding of lack of unity.

This application contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

1) The species are the polymercaptopolyamines of formulae Ia or Ib wherein X, A, E, R_1 and R_5 are identified.

2) Contingent upon the election of Group II, 1) hereinabove and the epoxy resins such as the diglycidyl ether of bisphenol A of Example II.1 on page 17, line 3 of the specification.

3) Contingent upon the election of Group III, 1) and 2) hereinabove and the polyamines such as the diethylenetriamine (DETA) utilized in Example II.2 on page 17.

Claims 1-14 are generic.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the reasons espoused with respect to the holding of lack of unity set forth heretofore.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The substituent X in formulae Ia and Ib includes the radical $-CHR_4$ wherein R_3 of the group $-CH(R_3)-$ and R_4 together forms an ethylene group according to page 1, the last line; page 2, line 2 and claim 1, lines 8 and 10. However, R_3 and R_4 are separated by the moiety $-C(SH)(R_1)-CH_2-$. How is an ethylene group formed in the presence of the intervening group? Furthermore, the organic substituents encompassed by R_4 alone are not defined.

The ester moiety within the limits of X is not concisely defined unless designated as "-C(=O)O" to affirmatively illustrate the carbonyl oxygen.

Claim 1 limits R_1 to hydrogen or methyl, whereas claim 6 dependent upon claim 1 opens R_1 to various substituents other than hydrogen or methyl.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United Stat s.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 5 and 8 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Luhowy et al. or Levine or Cameron.

Luhowy et al. exemplifies the reaction of excess methylamine with propylene sulfide (col. 9, Example 6) and the reaction of excess methylamine and 1,7-octadiene-bis-episulfide (cols. 10-11, Example 10). Levine (cols. 2-3, Examples 1-4) shows reaction products of equivalent or excess ethylenediamine or diethylenetriamine with propylene sulfide. Cameron (col. 5, Flexibilizer F) exhibits the reaction of excess ethylenediamine with propylene sulfide. Luhowy et al. (col. 5, lines 45-48) sets forth the conversion of an epoxide to an episulfide via reaction with potassium thiocyanate.

The specification on page 5, the last paragraph, describes the reaction of a (poly)episulfide of formula (IIIa) with amine R_5-NH-R_2 in an amine:episulfide equivalent ratio of from 1:1 to 1:10. Based on the (bis-)episulfide and (poly)amine reactants within the confines of the (poly)episulfide of formula (IIIa) and amine R_5-NH-R_2 reacted in molar ratios within the disclosed parameters, the reaction products of Luhowy et al., Levine or Cameron inherently possess structures within claimed formula Ia or Ib.

The burden of proof rests with applicants to demonstrate that the prior art reaction products do not exhibit structures within claimed formula Ia or Ib (*In re Fitzgerald*, 205 USPQ 594, CCPA 1980 and MPEP §§ 2112-2112.02).

None of the cited prior art recite X of formulae Ia and Ib being an oxygen atom or ester group. Claims 2, 3 and 7 require X to be oxygen. The R_1 substituents of claim 6 are not recited. However, substituents of claim 6 if redefined as R_2 are disclosed in the references.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Japanese Patent No. 7-173283 is directed to the reaction of a polyamide-amine with a thiirane. The polyamide-amine does not conform to the claimed moieties $-N(R_2)(R_5)$ of formula (Ia) or $-N(R_2)$-E-$N(R_2)$- of formula Ib since R_5 and E, respectively, do not embrace amide groups.

Swiss Patent No. 586,732 is drawn to the conversion of epoxy resins to episulfide resins by reaction with thiourea.

(703) 308-2399 (Fax no. (703) 872-9310)
Monday to Friday from 9:30 to 6:00 EST

Robert Sellers
Primary Examiner
Art Unit 1712

rs
5/15/03